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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,301

03/22/2006

Kazuya Kaida

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EXAMINER

KIM, RICHARD H

ART UNIT

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/573,301	Applicant(s) KAIDA ET AL.	
	Examiner RICHARD H. KIM	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 6-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Horiuchi et al. (US 2005/0024580 A1) in view of Uh et al. (US 6,892,437 B2) and Oshima et al. (US 5,725,032).

3. Re claims 1, 2 and 14, Horiuchi et al. discloses a method comprising a sealant arranging step of arranging a sealant on a main surface of one of or each of two substrates to be bonded to each other (paragraph 35); a bonding step of bonding the two substrate to each other (paragraph 35); to be performed prior to the sealant arranging step, a deaerating step of arranging in a pressure-reduced atmosphere at least a substrate on which the sealant is to be arranged out of the two substrates (paragraph 31); and to be performed prior to the bonding step, a releasing step of releasing the pressure reduced atmosphere (paragraph 33), wherein the releasing step is performed prior to the sealant arranging step (paragraph 33) and the sealant arranging step is performed in an atmosphere provided by the releasing step (paragraphs 34-35). However, the reference fails to disclose a liquid crystal dropping step of dropping liquid crystal on one of the two substrates.

4. Uh et al. discloses a method of dropping liquid crystal on one of two substrates (col. 3, lines 55-56).

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5. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a method of dropping liquid crystal on one of two substrates since one would be motivated to minimize liquid crystal consumption, cost and waste (col. 3, lines 58-60).

6. Furthermore, Horiuchi et al. fails to disclose that a releasing step is performed by an inert gas.

7. Oshima et al. discloses a releasing step of releasing a pressure-reduced atmosphere by an inert gas (col. 6, lines 24-29).

8. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a releasing step of releasing a pressure-reduced atmosphere by an inert gas. Examiner takes Official Notice that inert gases are well known in the art as being non-reactive. Therefore, employing an inert gas would have been obvious to preserve the state of the liquid crystal by preventing unwanted chemical reactions.

9. Re claim 3, Horiuchi et al. discloses that the sealant arranging step is performed in a released atmosphere (paragraph 33-35).

10. Re claim 4, Horiuchi et al., Uh et al. and Oshima et al. disclose the device previously recited, but fail to disclose that the sealant arranging step is performed within 30 minutes after the releasing step.

11. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the sealant arranging step to be performed within 30 minutes after the releasing step since one would be motivated to minimize the time between steps in order to

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improve manufacturing efficiency. Furthermore, determining the optimum time in between steps is a result effective variable and would require routine skill in the art.

12. Re claim 5, Horiuchi et al. discloses that the deaerating step includes a step of arranging the two substrates together in the pressure-reduced atmosphere (paragraph 31).

Response to Arguments

13. Applicant's arguments filed 2/9/10 have been fully considered but they are not persuasive.

14. Applicant argues that "Horiuchi fails to teach or suggest, at least, as claimed herein: (1) prior to said sealant arranging step, a deaerating step of arranging in a pressure-reduced atmosphere at least a substrate on which said sealant is to be arranged out of said substrates, (2) a sealant arranging step of arranging a sealant on a main surface of one of or each of two substrate to be bonded to each other, (3) a liquid crystal dropping step of dropping liquid crystal on one of said two substrate, and (4) prior to said bonding step, a releasing step of releasing said pressure-reduced atmosphere by an inert gas.

15. In response to item (1), examiner submits that Horiuchi discloses that prior to the sealant arranging step, a deaerating step of arranging in a pressure-reduced atmosphere at least a substrate on which the sealant is to be arranged out of the two substrate (paragraphs 31 and 35). In response to item (2), examiner submits that Horiuchi discloses a sealant arranging step of arranging a sealant on a main surface of one of or each of two substrate to be bonded to each other (paragraph 35). In response to item (3), examiner submits that Horiuchi discloses prior to

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the bonding step, a releasing step of releasing said pressure-reduced atmosphere (paragraph 33).

The teachings of Oshima et al. were incorporated in order to meet the limitation of "an inert gas".

16. In response to applicant's arguments that the "bonding step necessarily comes after the liquid crystal dropping step", and that it is "not seen how one of ordinary skill in the art combines the process of Horiuchi, which involves injecting liquid crystal between two bonded substrates, and the process of Uh, which drops liquid crystal dots on one substrate before the two substrates are bonded together", examiner submits that Uh et al. discloses that the liquid crystal dropping step is performed before the bonding step (col. 3, lines 55-67; col. 4, lines 1-14).

Therefore, one of ordinary skill in the art would have known to modify the teachings of Horiuchi so that the liquid crystal dropping step would be performed prior to the bonding step. As an example, the liquid crystal dropping step taught by Uh et al. can be performed prior to the step disclosed in Figure 5a of Horiuchi, thereby eliminating the need for a liquid crystal injecting step.

17. In response to applicant's argument that Uh et al. fails to teach or suggest that "to be performed prior to said sealant arranging step, a dearating step of arranging in a pressure-reduced atmosphere at least a substrate on which said sealant is to be arranged out of said two substrate; and to be performed prior to said bonding step, a releasing step of releasing said pressure-reduced atmosphere by an inert gas", examiner submits that the steps are disclosed by Horiuchi (paragraphs 31-33).

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD H. KIM whose telephone number is (571)272-2294. The examiner can normally be reached on 9:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Richard H Kim/
Primary Examiner, Art Unit 2871